



Chapter 5

Agricultural, Cultural and Natural Resources



INTRODUCTION

Natural resources include the air, water, land, fish, wildlife, biota and other such resources present in the community. Solon Springs owes its very origin as a community to the presence and abundance of natural resources. Prior to white settlement, present day Solon Springs was referred as *Wagwassikag* by the native ojibwe, or "a place where many white birch trees grow." Fort Saint Croix, located on the upper part of Lake Saint Croix was the site of a major French trading post from the mid 1600's through the mid 1700's. The fort served the region's growing fur trade industry and early natural resource based economy. By the 1900's the region's fur industry had all but vanished. The decline of the fur industry brought logging to the region, and, ultimately the incorporation of Solon Springs as a community. In 1896, the community of white birch was changed to Solon Springs in honor of Thomas Solon who built a water bottling company at the south end of Upper St. Croix Lake. Mr. Solon bottled and marketed sparkling spring water that was shipped all over the country.

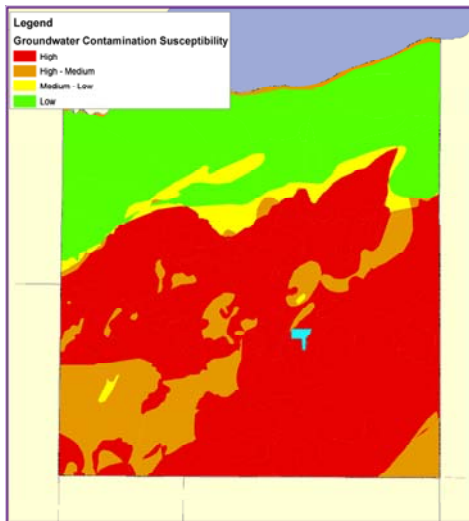
The Agricultural, Natural, and Cultural Resources chapter contains a compilation of background information, goals, objectives, policies, maps, and programs for the conservation and promotion of the effective management of natural resources such as groundwater, forests, productive agricultural areas, environmentally sensitive areas, threatened and endangered species, stream corridors, surface water, floodplains, wetlands, wildlife habitat, metallic and nonmetallic mineral resources, parks, open spaces, historical and cultural resources, community design, recreational resources, and other natural resources.



RESOURCE INVENTORY

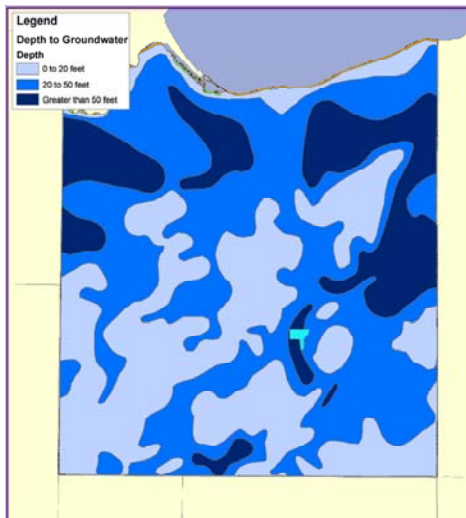
Groundwater

The Village of Solon Springs does not have a municipal water service, thus groundwater serves as the primary water source for village residents and businesses. The village is situated on a shallow unconsolidated sand and gravel aquifer which was deposited by receding continental glaciers. Below this aquifer lies a crystalline bedrock aquifer, which underlies the entire state of Wisconsin. The crystalline bedrock aquifer holds groundwater within fractures in the rock and typically has low yields.



Groundwater Contamination Susceptibility

Groundwater contamination susceptibility is generally based on the local soil conditions. In the Village of Solon Springs, sandy soils with poor drainage conditions predominate, resulting in a high susceptibility to groundwater contamination. Because household potable water is obtained via individual wells rather than through a municipal water system, contaminants infiltrating the groundwater could adversely impact a large number of community households.



Depth to Groundwater

Within the Village of Solon Springs, groundwater is commonly found depths of 50 feet and greater.



Soils

Soils play an important role in the community planning process. Soils have differing chemical and physical properties which affect their suitability to support residential development, road construction, septic systems and other land disturbing activities. Careful consideration of local soil properties as part of the planning process can potentially avoid future problems and costly remediation.

Soil types in the Village of Solon Springs have been identified by the Natural Resources Conservation Service (NRCS) as part of the Douglas County Soil Survey. In the survey, soils are rated based on their suitability for several specified uses, including construction, engineering, recreation, agriculture and wildlife uses. Individual soil types are characterized by the dominant condition found within each mapping unit and coded based on the degree of limitation. The limitation rating is described as not limited, slightly limited, somewhat limited or very limited. **Not limited** indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. **Slightly limited** indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. **Somewhat limited** indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.

Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

The planning area has three general soil types, sands, wet soils and loamy till soils. The Rubicon sands (0 to 6 percent slope) predominate much of the planning area on both the east and west sides of Upper Lake St. Croix. The deep, excessively drained Rubicon sands are typically associated with lake outwash plains and stream terraces. Wet soils, such as the Seelyville/Markey and Bowstring muck occur adjacent to Upper Lake St. Croix and the St. Croix River. These soils are deep and poorly drained and are commonly associated with lake plains, flood plains and river terraces. Loamy till soils, generally occur west of US 53 on the western edge of the planning area. Soil types in the Village of Solon Springs and extraterritorial area are depicted in **Map 5.1**.



Soil Limitations for Dwellings with and without basements

Soil properties and performance for building site development were evaluated in the Douglas County Soil Survey. Interpretations were made for several building site uses, including uses for dwellings both with and without basements.

Several factors may limit a soils potential to support dwellings with basements, including:

- Depth to bedrock
- Depth to pan
- Flooding
- Fragments
- Organic matter (OM)
- Ponding
- Shrink-swell (LEP)
- Slope
- Wetness

Soil Limitations for Septic Tank Absorption Fields

Septic tank absorption fields are areas in which effluent from a Septic Tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan may interfere with system installation. Poor system performance can result in pollution of groundwater or surface discharge of effluent, potentially impacting public health.

Soil Limitations Local Roads and Streets

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of



the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

Maps 5.2-5.4 depict soil limitations for engineering and construction activities in the Village of Solon Springs and adjoining extraterritorial area. Map 5.2 shows soil limitations for dwellings with basements. Soils within the St. Croix River floodway are rated as very limiting due to flood frequency, ponding, etc, while upland soils to the west are primarily limited due to ponding and depth of water table. Map 5.3, soil limitations for septic tank absorption fields, indicates that the majority of the planning area has soil drainage problems. These issues range from excessively drained sands in the uplands to poorly drained peat and muck soils of the floodway. Soils in the Village of Solon Springs are generally rated as very limiting for conventional septic tank absorption fields. On the excessively drained Rubicon sands, the predominant limiting factor is rapid permeability. In the mucky soils of the St. Croix River bottoms, ponding, slow water movement and depth to saturated zone are the primary limiting factors. Map 5.4 illustrates soil limitations for local roads and streets. While much of the village is not rated, the map shows that the best soils for supporting local roads and streets are in the western portion of the village, away from waterways.

Vegetation

The dominant land cover types within the village and extraterritorial area are deciduous forest, mixed and evergreen forest and wetlands. Map 5.5 depicts land cover types in the Village of Solon Springs and extraterritorial area.

Table 5.1: Land Cover, Village of Solon Springs and Extraterritorial Area

Table with 3 columns: Land Cover Type, Acres in village, Acres in Extraterritorial Area. Rows include Bare Land, Cultivated Crops, Deciduous Forest, Developed (High, Low, Medium Intensity), Developed, Open Space, Evergreen Forest, Grassland/Herbaceous, Mixed Forest, Open Water, Palustrine Emergent Wetland, Palustrine Forested Wetland, Palustrine Scrub/Shrub Wetland.

1Lands not currently in agricultural production



Village of Solon Springs Comprehensive Plan 2010 - 2030

Pasture/Hay	2.7	274.0
Scrub/Shrub	10.4	496.0
Grand Total	1293.5	11280.8

Source: NOAA, C-CAP data



Topography

The Village of Solon Springs is located within the northern highland geographic province, a region of moderate relief characterized by soils which were deposited by glacial activity. The village is situated along the edge of the St. Croix River trench, a large channel cut by meltwater draining from Glacial Lake Duluth. The most dominant feature on the local landscape is the St. Croix River and Upper St. Croix Lake. Surface elevation rises abruptly from 1014' at the lake to over 1140' on the plateau on the west edge of the village. Relief in the village is broken by several ravines and drainage channels extending westward from Upper St. Croix Lake. Park Creek, a perennial stream, flows through 75' deep channel in the heart of the village to its outlet at Park Creek Pond. Topographic relief in the Village of Solon Springs and extraterritorial area is depicted in **Map 5.6**.

Slope

Steeply sloping lands can present challenges or pose barriers to development. Steepness of topography is commonly expressed as percent slope (vertical rise/ horizontal run*100). As a general rule, slopes in excess of 20 percent are of greatest concern for any land disturbing activity. Steep slopes do not necessarily preclude all forms of development; although, costly engineering and site preparation/mitigation measures are often required in order to minimize potential adverse impacts. Potential problems associated with development of excessively sloping lands include erosion and slope stability.

Soil erosion from land disturbing activities and subsequent development can disturb natural cover and land surfaces resulting in a change of run-off patterns that may have a detrimental effect on water quality and downstream uses. Land disturbing activities and subsequent development need to be strictly monitored to avoid damage to other properties and to sensitive natural areas.

Steep slopes in Solon Springs tend to parallel the stream valleys and the St. Croix River trench. Slopes exceeding 20 percent are most common along hillsides adjacent to Upper St. Croix Lake, along Park Creek westward to Highway 53 and along the ridges north of County Highway A. The steepest lands in the village are found along the northwestern edge of Park Creek Pond, where slopes exceed 40 percent. Steep slopes in the Village of Solon Springs and extraterritorial area are depicted in **Map 5.6**.

Sensitive Resources

Wisconsin's Natural Heritage Inventory Program (NHI) focuses on locating and documenting occurrences of rare species and natural communities,



including state and federal endangered and threatened species. NHI data is exempt from the Wisconsin Open Records Law due to the vulnerable nature of these sensitive resources. Determination of the specific locations of sensitive resources within the Village of Solon Springs will require coordination between the town and the Wisconsin Department of Natural Resources. **Map 5.7** depicts the general locations of resources listed in the public access database. This list is not all-inclusive, as extremely sensitive and vulnerable resources are only listed at the county level.

The NHI identifies three sensitive resource occurrences within the village and adjoining extraterritorial area, including the Bald eagle (*Haliaeetus leucocephalus*), Greater Redhorse (*Moxostoma valenciennesi*) and Tiger Beetle (*Cicindela patruela patruela*). Other resources identified at the county level may also occur in the planning area.

Watersheds

The Village of Solon Springs lies in the St. Croix Basin, just south of the Lake Superior drainage basin boundary. The St. Croix basin drains approximately 7,760 square miles in Wisconsin and Minnesota. The village is entirely within the Upper St. Croix and Eau Claire River watershed. Lands within the village drain directly into the St. Croix River which is part of the Upper Mississippi drainage basin.

Surface Water Resources

The most predominate surface water feature in the village is Upper St. Croix lake, an 855 acre drainage lake located at the headwaters of the St. Croix Basin. *Upper St. Croix Lake* is classified as an Outstanding Resource Water (ORW) by the State of Wisconsin under NR 102. Outstanding Resource Waters are defined as a lake or stream having excellent water quality, high recreational and aesthetic value, high quality fishing, and are free from point source or non-point source pollution. Park Creek Pond, an 11 acre spring lake is located west of Business 53 next to the Douglas County Forestry Department. This pond is designated as a children's fishing area, and receives occasional trout stocking by the Wisconsin Department of Natural Resources.

There are approximately three miles of perennial streams in the Village of Solon Springs. Perennial streams have continuous flow year-round. *Park Creek*, a spring-fed coldwater trout stream, flows easterly through the village to its outlet at Upper Lake St. Croix. Several unnamed intermittent streams are also found in the village. These streams flow only part of the year, usually during spring runoff and following periods of heavy precipitation.

Prominent water resources within the extraterritorial planning area include the *St. Croix River*, a tributary to the Mississippi River which drains much of



northwestern Wisconsin. *Leo Creek*, a coldwater trout stream, bisects the southern part of the planning area and drains into Upper Lake St. Croix.

Floodplains

Floodplains are areas which are subject to periodic inundation by water. The physical floodplain boundaries were determined by the Federal Emergency Management Agency (FEMA) and are portrayed in the National Flood Insurance Program (NFIP) maps. Flood prone areas were determined by statistical analyses of records of river flow and rainfall, information obtained through consultation with the community, floodplain topographic surveys, and hydrologic and hydraulic analyses.

Most of the Village of Solon Springs does not lie within a floodplain. Areas directly adjacent to Upper Lake St. Croix, Park Creek and intermittent streams are the most flood prone lands in the community. Floodplains in the Village of Solon Springs are shown in **Map 5.8**.

Future development should be sited outside of flood prone areas. Before new development is allowed to occur, it is important that investigative work be conducted to accurately ascertain the true extent of the floodplain.

Floodplain Requirements

Section 87.30 Wisconsin State Statutes and Chapter NR 116 define Wisconsin's regulations with respect to floodplains. The Village of Solon Springs Floodplain Zoning Ordinance regulates land uses in floodplains within the village. Determination as to whether a building site is located in a flood plain must be made through zoning office review of flood plain maps or through field verification of flood boundary.



Wetlands

A wetland is commonly defined as an area where water is near, at, or above the land surface long enough to be capable of supporting aquatic or hydrophytic (water-loving) vegetation and which has soils indicative of wet conditions. These valuable natural resources provide many “free” benefits to man through the natural services they provide.

- Wetlands act as natural filters, removing nutrients and chemicals from the water and are often constructed as bio-engineered water filtration devices, used to treat and cleanse municipal wastewater or urban runoff.
- Wetlands serve as natural flood control devices by intercepting and holding water, a service which reduces flood risk to local communities.
- Wetlands also serve as groundwater recharge supplies
- Wetland vegetation serves to stabilize streambanks and watercourses. This action reduces overall soil erosion and protects water quality by reducing siltation and sediment loads.

The Department of Natural Resources classifies wetlands on the basis of vegetation type, soil type, and the degree of saturation or water cover. **Map 5.9** displays wetlands in the Village of Solon Springs.

<i>Type</i>	<i>Conditions</i>	<i>Associated Plant Species</i>
<i>Aquatic Bed</i>	Plants growing entirely on or in a water body no deeper than 6'.	Pondweed, duckweed, lotus and water-lilies
<i>Marshes</i>	Standing water	Cattails, bulrushes, pickerelweed, lake sedges and/or giant bur-reed
<i>Sedge or “wet” meadows</i>	May have saturated soils, rather than standing water	Sedges, grasses and reeds are dominant. Includes blue flag iris, marsh milkweed, sneezeweed, mint and several species of goldenrod and aster
<i>Scrub/shrub</i>	Bogs and alder thickets	Woody shrubs and small trees such as tag alder, bog birch, willow and dogwood
<i>Forested</i>	Bogs and forested floodplain complexes characterized by trees 20 feet or more in height	Tamarack, white cedar, black spruce, elm, black ash, green ash and silver maple



Table 5.2: Wetlands, Village of Solon Springs

Type	Acres in Village	Acres in Extraterritorial Area
Emergent	-	79.2
Forested	10.4	794.2
Scrub/Shrub	4.0	319.8
Total	14.4	1193.2

Wetland Requirements

The United States Army Corps of Engineers, the Wisconsin Department of Natural Resources, and local zoning codes regulate wetlands. Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged and fill material into waters of the state, including wetlands, and is the primary federal regulatory program for wetlands.

The Village of Solon Springs Zoning Code regulates the use/alterations of wetlands in the village. The regulations contained within this document apply to all lands within one thousand (1,000) feet of the ordinary high-water mark of any navigable lake, pond, or flowage and those lands within three hundred (300) feet of the ordinary high-water mark of any navigable river or stream.

Wildlife Habitat



Areas of primary wildlife habitat in the Village of Solon Springs include large, unbroken forested tracts, wetlands and stream corridors. Habitat potential is limited by roads and human development. Common wildlife species found within the village include whitetail deer, small forest mammals and migratory and resident birds.

There are three primary issues of concern related to wildlife habitat planning: fragmentation, invasive species, and pollution. Fragmentation involves the splitting up of large contiguous



tracts of habitat into smaller pieces.

Fragmentation increases the amount of edge areas, favoring species such as whitetail deer and ruffed grouse, but negatively impacts others due to increased predation/competition among species and increased range expansion of exotic species.

Heavy browsing by an expanding population of whitetail deer can alter the types of plant species that grow in some areas. As a result, some desirable or rare plant species may become threatened. Deer are thriving in many parts of Wisconsin because humans have created large amounts of edge habitat. Left unchecked, growing urban deer populations can result in severe overbrowsing, increased deer-vehicle collisions, and an elevated risk of disease.

Invasive/exotic species pose serious threats to wildlife populations. These species, once established, can decimate native species by out competing them for food and/or habitat. Because exotics are not part of the native ecosystem, they often have no natural (local) predators, thus may become prolific once established.

Purple loosestrife (*Lythrum salicaria*) is the only documented aquatic invasive species found in the Village of Solon Springs. Several infestation sites have been identified along Upper Lake St. Croix. The only known terrestrial invasive plant species in the yellow iris (*Iris pseudacorus*), which occurs along the shoreland areas of Upper Lake St. Croix. It should be noted these are the only known invasive species occurrences in the village and that others may exist as many areas have not been surveyed.

Metallic and Nonmetallic Mineral Resources

Metallic Mining

A metallic mine in Wisconsin is subject to many rules and regulations. Before a mine can be developed, Wisconsin requires a metallic mining permit and approved plans for environmental monitoring, mining, and reclamation, a risk assessment, and a contingency plan. An Environmental Impact Statement (EIS) must be prepared by the WDNR in order to assess the potential impacts of the proposed mine. The WDNR is also responsible for monitoring construction, mining, and reclamation activities.

The Wisconsin mining statutes state that the local municipality within which a metallic mine site is located has zoning approval authority over a proposed metallic mine. Before a proposed metallic mine can receive approval from the state, the local municipality must have granted its approval under its zoning or land use ordinances or have entered into a legally binding agreement with the mining proponent.



There are no known metallic mineral deposits in the Village of Solon Springs or within the extraterritorial planning area.

Non-metallic Mining

Chapter NR135 of the Wisconsin Administrative Code requires that all counties develop and adopt a non-metallic mining reclamation ordinance. NR 135 ensures that all nonmetallic mining sites are reclaimed in compliance with the uniform statewide reclamation standards by providing the detailed requirements and reclamation standards for local ordinances.

There is one former non-metallic mining site in the Village of Solon Springs; a sand and gravel operation located northwest of the intersection of CTH A and Business 53. Two sites are found in the extraterritorial planning area north of the village in the Town of Solon Springs. The Sauntry Pit (past producer), located south of CTH AA, and an operating sand and gravel pit located ¼ mile west of the Sauntry Pit.

Visual Resources

Local plans frequently highlight a desire to preserve the rural and natural character of a community. Tourism and economic development agencies often tout the area's beauty. Although natural, historic, and cultural resources have been extensively inventoried and studied in Douglas County, there has never been a methodical inventory of the County's scenic resources.

The Village of Solon Springs has many of the visual characteristics often associated with "northwoods" character, including lakes, forests, wetlands and wildlife. Key scenic resources include:






NATURAL RESOURCE PROGRAMS

The following list of programs may be used by the Village of Solon Springs achieve the goals and objectives presented in this comprehensive plan. This list is not comprehensive, and many other state and federal programs also exist.

Runoff Management Grants









The Wisconsin Department of Natural Resources administers two grant programs to support both the implementation of source-area controls to prevent runoff contamination and the installation of treatment systems to remove pollutants from runoff. The Targeted Runoff Management Program (TRM) provides a 70 percent cost share, up to \$150,000 to target high-priority resource problems.

-  Construction of urban and rural BMP's
-  2 year grant period
-  Site-specific

The Urban Nonpoint Source & Storm Water Management (UNPS&SW) Grant Programs are used to control runoff in urban areas, with a population density of 1,000 people per square mile

WDNR Stewardship Grants

WDNR Stewardship grants to local units of government provide funding for land acquisition, development and renovation projects for nature-based outdoor recreation purposes. Applicants must have a Department approved comprehensive outdoor recreation plan or master plan which has been approved by resolution.

-  Acquisition of a conservation easement
-  Land purchases
-  Development and renovation projects for the purpose of nature-based outdoor recreation
-  Development and renovation of support facilities
-  Shoreline habitat restoration projects
-  Riparian buffer rehabilitation
-  Shoreline enhancement Shoreline stabilization,
-  Purchase of land for noncommercial gardening for inhabitants of urbanized areas.



Lake Planning Grants

The Wisconsin Department of Natural Resources administers a number of lake management financial assistance programs designed to assist local units of government.

Small Scale Lake Planning Grant

Available to local units of government, including public inland lake protection and rehabilitation districts, town sanitary districts, and other local governmental units as defined in Wis. Stats. Ch. 66.0301.

- Funds may be used to collect and analyze information needed to protect and restore lakes and their watersheds.
- 75 percent cost share
- Total project cost not to exceed \$3,000

Self-help Trend Monitoring Grant

- Total project cost not to exceed \$3,000
- Grantees provide voluntary labor (130 hours) for lake monitoring activities
- WDNR provides materials and laboratory analysis

Large Scale Lake Planning Grants

Available to local units of government, including public inland lake protection and rehabilitation districts, town sanitary districts, and other local governmental units as defined in Wis. Stats. Ch. 66.0301.

- 75 percent cost share project
- Total cost not to exceed \$10,000
- Funds can be used for collecting lake data, analysis of land uses, analysis of ordinances, resource assessments, or developing components of a lake management plan.

Lake Protection Grants

Administered by the Wisconsin Department of Natural Resources, the Lake Protection Grants Program is designed to fund large-scale lake protection projects.

- Available to local units of government, including public inland lake protection and rehabilitation districts, town sanitary districts, and other local governmental units as defined in Wis. Stats. Ch. 66.0301
- 75 percent cost share



- Maximum award of up to \$200,000

Eligible projects include:

- Purchase of land or easements
- Restoration of wetlands or shoreland
- Development of ordinances or regulations
- Implementation of lake management plan projects

Wisconsin Forest Landowner Grant Program (WFLGP)

This is a state program administered by the WI Department of Natural Resources (DNR). Cost shares up to 50 percent are available for:

- Development of management plan
- Tree planting (site prep, planting stock, planting, etc.)
- Other approved practices to protect soil, water, wildlife, etc.

Conservation Reserve Program (CRP)



The CRP Program provides rental payments based on the agriculture rental value of the land, and provides cost-share assistance for up to 50 percent of the participant's eligible costs to establish approved conservation practices. Participants enroll in CRP contracts for 10 to 15 years. The program is administered by the Farm Service Agency (FSA), with technical assistance provided by NRCS and the Wisconsin Department of Natural Resources.

Managed Forest Law (MFL)

Wisconsin's Managed Forest Law Program is intended to promote sound forestry management practices by providing property tax reduction incentives to landowners. Wooded parcels at least 10 acres in size are eligible for enrollment, provided at least 80% of the land is productive forest land. Lands may be enrolled for either 25 or 50 year periods. Forest management plans are also required. Benefits of MFL enrollment include,





- Sustainable management plan
- Automatic eligibility for ATFS group certification
- Protection against overcutting
- Protection against annual tax hike
- Lower property tax
- Deferred tax until harvest
- Landowners are allowed to close up to 160 acres of their lands to the public but no more than 80 of the 160 acres may have been entered in 1987 through 2004.
- Technical assistance
- Permits conversion from FCL prior to the end of the FCL agreement.
- Predictable taxes



-  Long-term investment
-  Encourages woodland expansion

Wildlife Habitat Incentives Program (WHIP)

This federal program, administered by NRCS with WI DNR inputs, provides up to 75 percent cost share with emphasis towards:

-  Wildlife practices and plantings
-  Wetland restoration
-  Farmstead shelterbelts
-  Grazing systems

Environmental Quality Incentives Program (EQIP)

This federal program is administered by NRCS with WI DNR inputs and provides up to 75 percent cost share for certain conservation practices. Incentive payments may be provided for up to three years to encourage producers to carry out management practices they may not otherwise use without the incentive. However, limited resource producers and beginning farmers and ranchers may be eligible for cost-shares up to 90 percent.



AGRICULTURAL RESOURCES

Existing Agriculture

In 2007, no lands in the Village of Solon Springs were being used for agricultural purposes or were assessed or zoned as agricultural lands.

Prime Farmland

Prime farmland is defined by the Natural Resources Conservation Service as “land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. The land must also be available for these uses (cropland, pastureland, forestland, or other land but not water or urban built-up land).” Prime farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. Prime farmlands in the Village of Solon Springs and extraterritorial area are shown in **Map 5.10**. Prime farmland soils in the planning area include the Stanberry sandy loam (1 to 6 percent slope) on the east side of Upper Lake St. Croix. While there are no prime farmland soils within the village limits, adjoining areas to the west and north of the village would be prime farmland if they were drained. Farmlands of statewide significance (Newood-Pence complex, 1 to 6 percent) also occur to the west of US 53.

Farmland Preservation

Douglas County Farmland Preservation Plan

The Douglas County Farmland Preservation Plan (1982), drafted under the 1977 Wisconsin Farmland Preservation Act, provides detailed statistics, background information, maps, goals, objectives, and policies for farmland preservation. The plan also identifies key agricultural preservation areas within the county. The plan identifies the village as an “excluded area”, meaning they are currently developed, or used for other purposes and not expected to revert back to agriculture.

Zoning

The Village of Solon Springs Zoning Ordinance is the primary tool regulating the use of agricultural lands in the Village of Solon Springs. The Douglas County Zoning Ordinance regulates use of agricultural lands in the 1.5 mile extraterritorial area surrounding the village. Currently, 1,567 acres are zoned as agriculture (A-1) within the extraterritorial area. This includes lands



directly abutting the village on the north and west sides. Existing zoning is shown in **Map 8.4**.

FARMLAND AND NATURAL RESOURCE PROTECTION TOOLS

Conventional Zoning

Zoning is a tool that gives governmental bodies the power to intervene in the lives of private citizens for the protection of public health, safety, and welfare. Zoning separates conflicting land uses and ensures that development is directed in certain areas that can accommodate that particular land use. Several different types of specialized zoning exist. This is the primary land use regulatory tool used in Douglas County.

Exclusive Agricultural Zoning (EAZ)

EAZ zones are special zoning categories in which agriculture is considered the primary allowable use. Towns may adopt exclusive agricultural zoning for farmland under the Farmland Preservation Program. For farmers to be eligible for income tax credits, they must meet standards that require a minimum parcel size of 35 acres limit the use of the land to those that are agriculturally related. The ordinance must comply with the county farmland preservation plan.

Open Space Zoning

Cluster Design Approach

Under conventional zoning, a development designation is assigned to every acre of land within a jurisdiction. Typically, there is no land left over for open space/undeveloped land. Compulsory open space zoning could require that the "clustering" technique (outlined under Conservation Design Subdivisions) be used in order to group new homes onto a portion of the development, while preserving the remainder as unbuilt open space. Under this form of development, the same number of homes would be permitted on the site as a conventional design. Decisions on whether or not open space zoning should be obligatory should be based on local desires and requirements. Alternative approaches to mandatory open space zoning include requiring this form of development only in certain designations, or only in situations where specified resources exist (as defined by the local jurisdiction), or to mandate open space zoning in situations where a conventional development plan would remove or degrade more than a specified percentage of the site's resources.



Limited Use Approach

This designation is designed to preserve and enhance the use of open-space lands as a limited and valuable resource. It is further intended to permit limited but reasonable use of open-space land while protecting the public health, safety, and welfare.

Using this approach, a new zoning district is created (Open Space Zoning District). Typically, this designation would apply to lands identified by a comprehensive plan as "Open Space Areas" or "Resource Conservation Areas". Examples of permitted uses may be those activities that enhance or protect environmental resources or recreational activities.

Performance Zoning

Performance zoning uses performance standards to regulate development. Performance standards are zoning controls that regulate the effects or impacts of a proposed development instead of separating uses into various zones. The standards are often related to site development capability. For example, in agricultural areas, performance zoning could be used to limit development on prime agricultural soils and allow development on lower quality soils.

Transfer of Development Rights

The TDR program is a non-regulatory (voluntary) approach that allows the right to develop property to be transferred from one parcel (or zoning district) to another. Under a TDR program, development rights to a parcel of land are transferred from a "sending area" to another parcel referred to as the "receiving area". Sending areas are typically those areas where development is discouraged or limited, and receiving areas are areas where growth and development are encouraged. Under some TDR programs, local government awards development rights to each parcel of developable land in the community or in selected districts on the basis of the land's acreage or value. Landowners can then sell the development rights on the open market. The TDR program has been widely implemented at the local level due to the fact that it requires no major financial contribution by local government.

Conservation Design Subdivisions

The conservation design subdivision concept is an alternative development design to the conventional residential subdivision. Conventionally designed subdivisions are typically characterized by land divided into house lots and streets, with minimal (if any) open space. Usually, the remaining open space lands consist of the undevelopable portion of the subdivision (steep slopes, wetlands, floodplain, etc.). The conventional subdivision lacks communal



open space, community woodlands, or other open areas where people can meet and interact.

The purpose of a conservation design subdivision is to provide opportunity for development while maintaining open space characteristics, and/or farmland and while encouraging interaction among residents through site design and protection of habitat and environmental features. A typical conservation design subdivision contains the same number of lots that would be permitted under a conventional design. The lots are typically smaller than conventional lots and are designed for single-family homes reminiscent of traditional neighborhoods found in small towns throughout America.

The compact design of a conservation subdivision allows for the creation of permanent open space (typically 50 percent or more of the buildable area). This undeveloped land may serve as community open space land, farmland, or natural area. The conservation design subdivision has proven economic, environmental, and social advantages over conventionally designed subdivisions including:

Economic Advantages

- Lower infrastructure and design (engineering) costs
- Attractiveness of lots for home development
- Reduction in demand for public parklands

Environmental Advantages

- Protection of conservation areas and upland buffers (which would normally be developed)
- Reduced runoff due to less impervious surface cover
- Improved water filtration due to presence of vegetation and buffers
- Opportunities for non-conventional septic system design

Social Advantages

- Opportunities for interaction among residents (common open space)
- Pedestrian friendly
- Greater opportunity for community activities

Best Management Practices (BMP's)

Best management practices describe voluntary procedures and activities aimed at protection of natural resources. The recommendations portion of the plan narrative describes the use of three types of BMP's: shoreland, construction, and forestry.











Shoreland BMP's

Shoreland BMP's are a set of specific actions that landowners can take to help protect and preserve water quality. In many cases, this means preserving the natural characteristics of shoreland property.

The shoreland BMP's produced by the University of Minnesota-Extension (UM-EX) provide specific instructions for a large range of property types (e.g. steep slopes, low vegetation, etc.) and issues pertaining to human use of shoreland (e.g. septic systems, gardens, landscaping, etc.). The information for these BMP's has been gathered from many different sources and is very thorough. Wisconsin does not have a specific set of shoreland BMP's, as it relies on forestry and construction BMP's to cover the shoreland area. As more information is gathered on the impact of human activity on shoreland, the BMP's may change accordingly. The shoreland BMP's outlined by UM-EX are meant to apply to all landowners on and near surface waters. It has been discovered that heavy land use by humans on, as well as around, shorelines can promote pollution of the water for human use and disrupt the natural habitation of the area.

The UM-EX Shoreland BMP's contain 20 "Fact Sheets" which provide detailed instruction and diagrams on the topics mentioned above. Some of the Sheets are titled:

-  Maintaining Your Shoreland Septic System
-  Ensuring A Safe Water Supply
-  Limiting Impact of Recreation on Water Quality
-  Stabilizing Your Shoreline To Prevent Erosion
-  Caring For Shoreline Lawns and Gardens
-  Managing Your Shoreline Woodlot
-  Managing Crops and Animals Near Shoreland
-  Conserving Water

Construction BMP's

The soil erosion rate in Wisconsin during construction is 10 to 100 times greater than the rate of erosion from agriculture. This erosion and the resulting sedimentation significantly degrades the quality of Wisconsin's surface waters.

Construction BMP's are a set of measures and practices gathered and organized by the Department of Natural Resources from numerous agencies throughout the country which are used to eliminate or drastically reduce this erosion and sedimentation brought on by construction and development.

In the Wisconsin Construction Site Best Management Practice Handbook, the principals of erosion and sediment control are described and then the details



of seven subjects related to the prevention of erosion are explained. The seven subjects included in the Handbook are:

- Diverting Flow
- Managing Overland Flow
- Trapping Sediment in Channelized Flow
- Establishing Permanent Drainage Ways
- Protecting Inlets
- Trapping Sediment During Site Dewatering
- Preventing Tracking

Within each of these subjects, there are subsections providing more information on specific types of problems. For example, in the "Diverting Flow" section temporary and permanent diversion are discussed. In the "Managing Overland Flow" section, numerous blockades are discussed including Silt Fences, Straw Bale Fences, Mulching, and Seeding. In "Trapping Sediment in Channelized Flow", different barriers such as Straw Bale Barrier and Sediment Basin are diagrammed and explained. The means to effectively implement each strategy are covered in depth in the handbook and often include diagrams and site-specific directions.

Forestry BMP's

The goal of forestry BMP's in Wisconsin is to help loggers, landowners, and land managers be good stewards by protecting water quality during forest management activities. The Wisconsin Department of Natural Resources guide titled "Wisconsin's Forestry Best Management Practices for Water Quality" outlines in detail the procedures and practices recommended to attain this goal. These practices are voluntary in the sense that they are not legally binding but are strongly recommended by the DNR to ensure clean and safe water in Wisconsin.

There are eight subject headings in the Forestry BMP. Each of them describes in detail actions and practices that pertain to the specific topic, including:

- Fuels, Lubricants, and Spills
- Riparian Management Zones
- Forest Roads
- Mechanical Site Preparation and Tree Planting
- Timber Harvesting
- Prescribed Burning and Wildfire
- Chemicals
- Wetlands

Within each of these subjects there are more specific topics covered. For example, the Forest Roads BMP gives instructions for Stream Crossing, Road



Drainage, Drainage Structures, Soil Stabilization, and Road Maintenance. The Timber Harvesting BMP includes Planning, Harvesting, Landings, and Skid Trails.

For more details, refer to the “Wisconsin’s Forestry Best Management Practices for Water Quality” Field Manual. It is available online or in print form the WDNR.

Wisconsin Farmland Protection Program (FRPP)

Farm and Ranch Lands Protection Program keeps productive farmland in privately owned agricultural use by assisting states, tribes, and local government or non-profit entities with the purchase of conservation easements or development rights on productive farmland, and on farms containing significant historical or archaeological resources. Under this program, the Natural Resources Conservation Service will provide up to 50 percent of the purchase cost for perpetual easements on eligible farmland.



HISTORIC AND CULTURAL RESOURCES

Cultural and historic resources are essential in understanding a community’s settlement pattern and heritage. These resources serve as a bridge between the past and the present and often play a significant role in defining community character.

Wisconsin Architecture and Heritage Inventory

The official historic resource catalog for the State of Wisconsin is the Wisconsin Architecture and Heritage Inventory (AHI). The AHI is a search engine which contains a documentation of 120,000 properties in the State of Wisconsin. This database is maintained by the Wisconsin Historical Society, based in Madison, Wisconsin. It is important to note that the AHI is not a comprehensive listing of Wisconsin’s historic resources. It is likely that other historic properties and resources exist within the Village of Solon Springs but have yet to be identified or published. Properties listed in the AHI (**Table 5.3**) are not given any special status or increased level of protection.

Table 5.3: Wisconsin Architecture and Heritage Inventory, Village of Solon Springs

Ahi#	Location	Historic Name
17202	SW corner of E 1st St. and Lake Avenue	Solon Springs Depot
17203	W side of W 1st St., 3rd bldg s of County Highway A	Our Lady Of Good Council Catholic Church
17204	SW corner of W 1st St. and County Highway A	Our Savior’s Lutheran Church
17205	Railroad St and Jackpine Avenue	John Beck House
17207	W side of US 53, 0 .35 mi N of County Highway A	Solon Springs Section House
19206	Route 1 Box 595a	St. Croix Elementary School
130678	George Avenue	Historic retail building
130680	1987 George Avenue	General store
130681	9150 George Avenue	Historic house
130682	9158 George Avenue	Historic house





Source: Wisconsin Historical Society



The National and State Register of Historic Places

The National Register of Historic Places was authorized under the National Historic Preservation Act of 1966. Properties listed in the register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the National Park Service (NPS), which is part of the U.S. Department of the Interior.

The State Register of Historic Places was established in 1989. State listings must meet evaluation criteria, which include:

-  Property is associated with events that have made a significant contribution to the broad patterns of national, state or local history.
-  Property is associated with the lives of persons significant to our past.
-  Architectural, engineering or artistic merit.
-  Archaeological significance

Resources for Historic Preservation

The Wisconsin State Historical Society

The WHS is a both a state agency and a private membership organization. The state office is located in Madison. By state statute, the WHS is responsible for collecting, advancing, and disseminating knowledge of Wisconsin.

Wisconsin Historical Society History Center and Archives (HCA)

The HCA serves as the northern field office of the Wisconsin State Historical Society, from its offices at the Northern Great Lakes Visitor Center. The HCA is part of a statewide network of Area Research Centers and is managed by the Society's Division of Historic Sites.

Douglas County Historical Society

The Douglas County Historical Society works to collect and preserve the historic and cultural heritage of Douglas County. Their office is located at 1101 John Avenue in the City of Superior.



Historical and Cultural Resource Programs

The following list of programs may be used by the Village of Solon Springs to achieve its historic and cultural resource goals and objectives presented in this comprehensive plan. This list is not comprehensive, and many other state and federal programs may also exist.

Wisconsin Historic Preservation Fund Subgrants (Tax Credits)

Historic Preservation Fund (HPF) subgrants are administered by the Wisconsin Historical Society's Division of Historic Preservation (DHP). These grants are in the form of income tax credits for income-producing historic buildings, historic homes, and archaeological sites. These credits are available to all local units of government in the State of Wisconsin and to non-profit organizations.

Wisconsin Humanities Council Historic Preservation Grants

The Wisconsin Humanities Council offers grants of up to \$10,000 for projects that enhance appreciation of the need for historic preservation and/or increase public awareness of the importance of particular historic buildings or decorative art works in Wisconsin. Preference is given to small towns and rural communities with populations under 30,000.

National Trust for Historic Preservation/Jeffris Preservation Services Fund (PFS)

This fund was established in 1998 by a gift from the Jeffris Family Foundation to the National Trust. The PSF provides funding to small towns to use in the planning stages of historic preservation projects. Eligible expenses include costs for professional consultants and educational activities. A dollar for dollar match is required for these grants.